



## SEQUENCE LISTING

<110> New York Medical College  
<120> Splice Choice Antagonists as Therapeutic Agents  
<130> 51230-00601  
<140> 09/849,967  
<141> 2001-05-08  
<160> 7  
<170> PatentIn version 3.3  
<210> 1  
<211> 1689  
<212> DNA  
<213> chicken

<220>  
<221> misc\_feature  
<222> (1)..(1689)  
<223> Full length cDNA sequence of chicken hnRNP A1.

<220>  
<221> misc\_feature  
<222> (141)..(1276)  
<223> Open reading frame of cDNA sequence from chicken hnRNP A1.

<400> 1  
gcgtctccac ccctcagcgg gcggcggtga gtgcgccagg ccagcgccgg cgtgggaccg 60  
agcgggcggtg aaggcgcgag ctgaacgctg gcacggtttc ctagatctaa aagaaaggcc 120  
gagttagagt acccttccaa aatggctgct attaaggaag agagagaggt ggaagattac 180  
aagagaaaaa ggaagacgat cagcacaggc catgagccta aggagccaga gcagttgaga 240  
aagctgttca ttggagggtct gagcttcgag acgacggatg atagcttgag agagcacttt 300  
gaaaaatggg gcacactcac ggactgtgtg gtgatgagag acccacaac aaaacgttcc 360  
agaggctttg gctttgttac ttactcttgc gtggaagagg tggatgcggc catgagcgct 420  
cgaccacata aggtggatgg acgtgtggtt gaaccaaaga gagcagtttc aagggaggat 480  
tctgtaaagc ctggggcgca tctcacagta aagaaaatat ttgttggtgg cattaagaa 540  
gatacagaag aatataattt aagggggtac ttgaaacat atggcaagat cgaaacgata 600  
gaagtcatgg aagacagaca aagtggaaag aaaagaggct tcgcttttgt aacttttgat 660  
gatcacgata cagttgataa aattgttgtt cagaaatacc atactataaa tggtcataac 720  
tgcaagata aaaaagcact ctcaaaacaa gagatgcaga ctgccagctc tcagagaggt 780  
cgtgggggtg gttcaggcaa cttcatgggt cgtggaaatt ttggaggtgg tggaggaaac 840  
tttgccgag gaggaactt tgggtggaaga ggaggctatg ggggtggtgg tggcgggtgt 900  
gggagcagag gaagctttgg ggggtggtgat ggatacaacg gatttggtga tgggtggcaac 960

tatggaggtg gtcctggcta tggcagcaga gggggttatg gtggtggtgg aggaccagga	1020
tatggaaacc caggtggtgg atatggaggt ggaggaggag gatatggtgg ctacaatgaa	1080
ggaggcaatt ttggaggtgg taattatgga ggcagtggaa actacaatga ctttggtaac	1140
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agaagttcag gcagtcacct tggtggtggt tatggatctg gaagtggaag tgggggctat	1260
ggtggtagaa gattctaaaa atgctaccag aaaaagggt acagttctta gcaggagaga	1320
gagcgaggag ttgtcaggaa agctgcagtt tactttgaga cagtcgtccc aaatgcatta	1380
gaggaactgt aaaatctgcc acagaaggaa cgatgatcca tagtcagaaa agttactgca	1440
gcttaaacag gaaacccttc ttgttcagga ctgtcatagc cacagtttgc aaaaagagca	1500
gctattggtt aatgcaatgt agtgtcggtta gatgtacatc ctgaggtctt tatctgttgt	1560
agctttgtct ttcttttttc tttttatatt cccattacat caggtatatt gccctgtaaa	1620
ttgtggtagt ggtacaagga ataaacaaat taaggaattt ttggcttttc aaaaaaaaaa	1680
aaaaaaaaa	1689

<210> 2  
 <211> 378  
 <212> PRT  
 <213> Chicken

<220>  
 <221> PEPTIDE  
 <222> (1)..(378)  
 <223> Amino acid sequence of chicken hnRNP A1

<400> 2

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Arg	Lys	Thr	Ile	Ser	Thr	Gly	His	Glu	Pro	Lys	Glu	Pro	Glu	Gln	Leu
			20					25					30		

Arg	Lys	Leu	Phe	Ile	Gly	Gly	Leu	Ser	Phe	Glu	Thr	Thr	Asp	Asp	Ser
		35					40					45			

Leu	Arg	Glu	Gln	Phe	Glu	Lys	Trp	Gly	Thr	Leu	Thr	Asp	Cys	Val	Val
	50					55					60				

Met	Arg	Asp	Pro	Gln	Thr	Lys	Arg	Ser	Arg	Gly	Phe	Gly	Phe	Val	Thr
65					70					75					80

Tyr	Ala	Thr	Val	Glu	Glu	Val	Asp	Ala	Ala	Met	Ser	Ala	Arg	Pro	His
				85					90					95	

Lys Val Asp Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser Arg Glu  
 100 105 110  
 Asp Ser Val Lys Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val  
 115 120 125  
 Gly Gly Ile Lys Glu Asp Thr Glu Glu Tyr Asn Leu Arg Gly Tyr Phe  
 130 135 140  
 Glu Thr Tyr Gly Lys Ile Glu Thr Ile Glu Val Met Glu Asp Arg Gln  
 145 150 155 160  
 Ser Gly Lys Lys Arg Gly Phe Ala Phe Val Thr Phe Asp Asp His Asp  
 165 170 175  
 Thr Val Asp Lys Ile Val Val Gln Lys Tyr His Thr Ile Asn Gly His  
 180 185 190  
 Asn Cys Glu Asp Lys Lys Ala Leu Ser Lys Gln Glu Met Gln Thr Ala  
 195 200 205  
 Ser Ser Gln Arg Gly Arg Gly Gly Gly Ser Gly Asn Phe Met Gly Arg  
 210 215 220  
 Gly Asn Phe Gly Gly Gly Gly Gly Asn Phe Gly Arg Gly Gly Asn Phe  
 225 230 235 240  
 Gly Gly Arg Gly Gly Tyr Gly Gly Gly Gly Gly Gly Gly Ser Arg  
 245 250 255  
 Gly Ser Phe Gly Gly Gly Asp Gly Tyr Asn Gly Phe Gly Asp Gly Gly  
 260 265 270  
 Asn Tyr Gly Gly Gly Pro Gly Tyr Gly Ser Arg Gly Gly Tyr Gly Gly  
 275 280 285  
 Gly Gly Gly Pro Gly Tyr Gly Asn Pro Gly Gly Gly Tyr Gly Gly Gly  
 290 295 300  
 Gly Gly Gly Tyr Gly Gly Tyr Asn Glu Gly Gly Asn Phe Gly Gly Gly  
 305 310 315 320  
 Asn Tyr Gly Gly Ser Gly Asn Tyr Asn Asp Phe Gly Asn Tyr Ser Gly  
 325 330 335  
 Gln Gln Gln Ser Asn Tyr Gly Pro Met Lys Gly Gly Gly Ser Phe Gly  
 340 345 350

Gly Arg Ser Ser Gly Ser Pro Tyr Gly Gly Gly Tyr Gly Ser Gly Ser  
355 360 365

Gly Ser Gly Gly Tyr Gly Gly Arg Arg Phe  
370 375

<210> 3  
<211> 320  
<212> PRT  
<213> Homo sapiens

<220>  
<221> PEPTIDE  
<222> (1)..(320)  
<223> Amino acid sequence of human hnRNP A1

<400> 3

Met Ser Lys Ser Glu Ser Pro Lys Glu Pro Glu Gln Leu Arg Lys Leu  
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Phe Ile Gly Gly Leu Ser Phe Glu Thr Thr Asp Glu Ser Leu Arg Ser  
20 25 30

His Phe Glu Gln Trp Gly Thr Leu Thr Asp Cys Val Val Met Arg Asp  
35 40 45

Pro Asn Thr Lys Arg Ser Arg Gly Phe Gly Phe Val Thr Tyr Ala Thr  
50 55 60

Val Glu Glu Val Asp Ala Ala Met Asn Ala Arg Pro His Lys Val Asp  
65 70 75 80

Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser Arg Glu Asp Ser Gln  
85 90 95

Arg Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val Gly Gly Ile  
100 105 110

Lys Glu Asp Thr Glu Glu His His Leu Arg Asp Tyr Phe Glu Gln Tyr  
115 120 125

Gly Lys Ile Glu Val Ile Glu Ile Met Thr Asp Arg Gly Ser Gly Lys  
130 135 140

Lys Arg Gly Phe Ala Phe Val Thr Phe Asp Asp His Asp Ser Val Asp  
145 150 155 160

Lys Ile Val Ile Gln Lys Tyr His Thr Val Asn Gly His Asn Cys Glu  
165 170 175

Val Arg Lys Ala Leu Ser Lys Gln Glu Met Ala Ser Ala Ser Ser Ser  
                   180                                  185                                  190  
 Gln Arg Gly Arg Ser Gly Ser Gly Asn Phe Gly Gly Gly Arg Gly Gly  
                   195                                  200                                  205  
 Gly Phe Gly Gly Asn Asp Asn Phe Gly Arg Gly Gly Asn Phe Ser Gly  
                   210                                  215                                  220  
 Arg Gly Gly Phe Gly Gly Ser Arg Gly Gly Gly Gly Tyr Gly Gly Ser  
                   225                                  230                                  235                                  240  
 Gly Asp Gly Tyr Asn Gly Phe Gly Asn Asp Gly Ser Asn Phe Gly Gly  
                   245                                  250                                  255  
 Gly Gly Ser Tyr Asn Asp Phe Gly Asn Tyr Asn Asn Gln Ser Ser Asn  
                   260                                  265                                  270  
 Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly Arg Ser Ser Gly Pro  
                   275                                  280                                  285  
 Tyr Gly Gly Gly Gly Gln Tyr Phe Ala Lys Pro Arg Asn Gln Gly Gly  
                   290                                  295                                  300  
 Tyr Gly Gly Ser Ser Ser Ser Ser Tyr Gly Ser Gly Arg Arg Phe  
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<210> 4  
 <211> 1136  
 <212> DNA  
 <213> Chicken

<220>  
 <221> misc\_feature  
 <222> (1)..(1136)  
 <223> Open reading frame of cDNA for chicken hnRNP A1

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 gagcttcgag acgacggatg atagcttgag agagcacttt gaaaaatggg gcacactcac 180  
 ggactgtgtg gtgatgagag acccacaac aaaacgttcc agaggctttg gctttgttac 240  
 ttactcttgc gtggaagagg tggatgcggc catgagcgct cgaccacata aggtggatgg 300  
 acgtgtggtt gaaccaaaga gagcagtttc aaggaggat tctgtaaagc ctggggcgca 360  
 tctcacagta aagaaaatat ttgttggtgg cattaaagaa gatacagaag aatataat 420  
 aagggggtac tttgaaacat atggcaagat cgaaacgata gaagtcatgg aagacagaca 480

aagtggaaag aaaagaggct tcgcttttgt aacttttgat gatcacgata cagttgataa 540  
aattgttgtt cagaaatacc atactataaa tggtcataac tgcgaagata aaaaagcact 600  
ctcaaaacaa gagatgcaga ctgccagctc tcagagaggt cgtgggggtg gttcaggcaa 660  
cttcatgggt cgtggaaatt ttggaggtgg tggaggaaac tttggccgag gaggaaactt 720  
tgggtggaaga ggaggctatg ggggtggtgg tggcgggtgg gggagcagag gaagctttgg 780  
gggtggtgat ggatacaacg gatttggtga tgggtggcaac tatggaggtg gtcctggcta 840  
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atatggaggt ggaggaggag gatatggtgg ctacaatgaa ggaggcaatt ttggaggtgg 960  
taattatgga ggcagtggaa actacaatga ctttggtaac tacagtggac agcagcagtc 1020  
caattacggt cccatgaaag gtggtggcag ttttggtggt agaagttcag gcagtcacct 1080  
tgggtggtgg tatggatctg gaagtggaag tgggggctat ggtggtagaa gattct 1136

<210> 5  
<211> 10  
<212> RNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)..(10)  
<223> Exonic splice silencer (ESS) nucleic acid sequence for hnRNP A1

<400> 5

uagggcaggc 10

<210> 6  
<211> 10  
<212> RNA  
<213> Chicken

<220>  
<221> misc\_feature  
<222> (1)..(10)  
<223> Exonic splice silencer (ESS) nucleic acid sequence for hnRNP A1

<400> 6

uagggagggc 10

<210> 7  
<211> 8  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE

<222> (1)..(1)  
 <223> Xaa represents a Lysine or an Arginine  
  
 <220>  
 <221> SITE  
 <222> (3)..(3)  
 <223> Xaa represents a phenylalanine or tyrosine  
  
 <220>  
 <221> SITE  
 <222> (4)..(4)  
 <223> Xaa represents a glycine or alanine  
  
 <220>  
 <221> misc\_feature  
 <222> (7)..(7)  
 <223> Xaa can be any naturally occurring amino acid  
  
 <220>  
 <221> SITE  
 <222> (8)..(8)  
 <223> Xaa represents a phenylalanine or tyrosine  
  
 <400> 7

Xaa Gly Xaa Xaa Pro Val Xaa Xaa  
 1 5